

Appendix 1. Description of the bee functional traits used in the analyses.

Functional trait	Type	Description	Reference
Sociality	Solitary	Species in which all females reproduce and provide for its own nest.	Danforth et al. (2019)
	Social	Species in which not all females reproduce; breed in colonies.	
	Parasite	Species in which females lay their eggs in nests of host species.	
Nesting behavior	Above	Nests are built above the ground level (i.e. cavities, hollow stems).	Simplification of Danforth et al. (2019)
	Below	Nests are built below the ground level (i.e. excavated in bare soils, underground cavities).	
	Do not build nest	Parasitic species do not build their own nest.	
Pollen preference	Polylectic	Species foraging for pollen from a very wide spectrum of unrelated plants.	Simplification of Cane & Slipes (2006)
	Oligolectic	Species foraging for pollen from at most one plant family.	
	Do not collect pollen	Parasitic species do not collect pollen as food for their brood.	
Female size	Small	Body length ≤ 8 mm	Twerd et al. (2021)
	Medium	Body length 9 – 14 mm	
	Large	Body length ≥ 15 mm	

References

- Danforth, B. N., Minckley, R. L., Neff, J. L., & Fawcett, F. (2019). The solitary bees: biology, evolution, conservation. Princeton University Press.
- Cane, J. H., & Sipes, S. (2006). Characterizing floral specialization by bees: analytical methods and a revised lexicon for oligolecty. *Plant-pollinator interactions: from specialization to generalization*, 99, 122.
- Twerd, L., Sobieraj-Betlińska, A., & Szefer, P. (2021). Roads, railways, and power lines: Are they crucial for bees in urban woodlands? *Urban Forestry & Urban Greening*, 61, 127120.